



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,415	01/14/2003	Joerg Hauptmann	82300	8688
24628 7590 02/22/2007 WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			EXAMINER DEGRANO, BRIAN L	
			ART UNIT	PAPER NUMBER
			2616	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/22/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/806,415

Applicant(s)

HAUPTMANN ET AL.

Examiner

Brian L. DeGrano

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. In view of applicant's amendment filed on 11/30/2006:
 - The status of the application is still pending with reference to claims 1 and 3-21.
 - The objection to the specification (abstract) has been withdrawn.
 - The objections to claims 1-10 and 13-21 have been withdrawn.
 - Claim 2 has been canceled.
 - The 35 U.S.C. 112, second paragraph rejections to claims 6 and 8-10 have been withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3-17, and 21 are rejected under 35 U.S.C. 102(b) as being unpatentable over Rybicki et al. (US Patent No. 5,781,728, hereinafter Rybicki) in view of Russell et al. (US Patent No. 5,757,803, hereinafter Russel).
 - With respect to claim 1, Rybicki discloses a line terminating device (Figure 3) for a subscriber line which transmits and receives broadband signals via a single subscriber line (Column 3, lines 12-14), a broadband signal being composed of a broadband or narrow band audio frequency voice signal (ISDN - Column 3, lines 12-14,

Art Unit: 2616

POTS – Column 3, lines 38-41), and a broadband higher frequency data signal (ADSL – Column 3, lines 12-14), and the frequency bands of the voice signal and of the data signal essentially not overlapping (Column 4, lines 8-11), characterized in that a digital frequency separating filter is provided which separates the audio-frequency voice signal and the higher frequency data signal from one another (Column 3, lines 60-63) and the digital frequency separating filter is arranged in the digital section of the terminating device (Column 5, lines 42-45).

Rybicki also discloses an analog/digital converter (Figure 14 – Ref No. 223), a digital/analog converter (Figures 4 and 6, Ref. No. 118),

Rybicki does not disclose that the digital frequency filter separates the digital received signal into a first digital voice signal and first digital data signal and combines a second digital voice signal and a second digital data signal to form the digital transmit signal.

Russell teaches a digital frequency separating filter that separates the digital received signal into a first digital voice signal and first digital data signal and combines a second digital voice signal and a second digital data signal to form the digital transmit signal (Figure 1A contains both low-pass and high-pass which filter and combine xDSL and POTS signals).

At the time of the invention, It would have been obvious to one of ordinary skill in the art to add the filtering circuit taught in Russell to the line termination device disclosed in Rybicki.

Art Unit: 2616

The motivation for doing so would be to provide some means for a large trans-hybrid loss when a splitter is included (Russell, Column 3, lines 20-21).

- With respect to claim 3, Rybicki discloses all the limitations except that the digital frequency separating filter does not have both a first digital low-pass filter and a digital high-pass filter being supplied with the digital received signal or that the digital frequency separating filter does not have both a second digital low-pass filter and a second digital high-pass filter and a digital adder.

Russell discloses a circuit containing both a digital high pass filter and a digital low pass filter followed by a digital adder that combines the signals (Figure 1A and Column 1, lines 28-31).

At the time of the invention, It would have been obvious to one of ordinary skill in the art to add the filtering circuit taught in Russell to the line termination device disclosed in Rybicki.

The motivation for doing so would be to provide some means for a large trans-hybrid loss when a splitter is included (Russell, Column 3, lines 20-21).

- With respect to claim 4, Rybicki discloses a decimation filter (Figures 12 and 14).
- With respect to claim 5, Rybicki discloses an interpolation filter (Figures 4, 6, and 8).
- With respect to claim 6, Rybicki discloses that the digital frequency separating filter has a noise shaper filter which follows the digital adder (Column 7, line 19).
- With respect to claim 7, Rybicki discloses an oversampling sigma/delta ADC (Column 4, lines 23-25).

Art Unit: 2616

- With respect to claim 8, Rybicki discloses a digital signal processor (Column 3, lines 42-43).
- With respect to claim 9, Rybicki discloses all the limitations except that the ADC is preceded by an automatic gain control circuit for controlling the amplitude of the received broadband analog signal.

Russell discloses an automatic gain controller (amplifier, Column 2, lines 21-22).

At the time of the invention, It would have been obvious to one of ordinary skill in the art to add the automatic gain control circuit taught in Russell to the line termination device disclosed in Rybicki.

The motivation for doing so would be to provide some means for a large trans-hybrid loss when the splitter is included (Russell, Column 3, lines 20-21).

- With respect to claim 10, Rybicki discloses a DAC followed by a power cutback circuit for cutting back the power spectrum distribution (Column 10, lines 50-55).
- With respect to claim 11, Rybicki discloses that the voice signal is an ISDN voice signal (Column 3, lines 12-14) and that the higher-frequency signal is an ASDL signal (Column 3, lines 12-14).
- With respect to claim 12, Rybicki discloses that the voice signal is a POTS signal (Column 3, lines 38-41) voice signal and that the higher-frequency signal is an ASDL signal (Column 3, lines 12-14).
- With respect to claim 13, Rybicki discloses that digital frequency separating filter is designed with a number of channels, in which arrangement in each case POTS/ISDN

Art Unit: 2616

voice signals and ADSL data signals can be transmitted via the multiplicity of channels (Column 1, lines 46-48).

- With respect to claim 14, Rybicki discloses that the digital frequency separating filter has an echo canceller which is arranged both between an upstream signal path and a downstream path (Column 9, line 55).
- With respect to claim 15, Rybicki discloses that the echo canceller is provided for coarse correction and filters out an interference signal fed back by the digital separating filter (Column 9, lines 50-56).
- With respect to claim 16, Rybicki discloses that the echo canceller is only used with the ADSL and ISDN signals (Column 9, lines 50-56).
- With respect to claim 17, Rybicki discloses that the line terminating device has interfaces to the transceiver circuits for the ISDN/POTS signal and ADSL signal and/or the transceiver circuits themselves have in each case at least one further echo canceller which is used for fine correction of the interference signal set back in each case (Column 9, lines 50-56).
- With respect to claim 21, Rybicki discloses that the digital frequency separating filter has at least one sampling rate adaptation stage and a clock synchronization unit which ensures that the sampling rates of the respective signal streams are equal magnitude at the summation point and at the splitting point (Figures 12 and 14, Column 9, lines 40-48). It is inherent that a downsampler would have a synchronized clock that ensured that the sampling rates were the same at various points throughout the circuit.

4. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki in view of Russel and further in view of Xu et al. (US Patent No. 6,005,854, hereinafter Xu) as applied to claim 1 above.

- With respect to claims 18-19, Rybicki in view of Russel discloses all the limitations except that a pulse shaper follows the ADSL data signal.

Xu teaches a pulse shaper and combiner (Figure 2, Ref No. 150 and Column 4, lines 16-24).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to add the pulse shaper taught in Xu to the line termination device disclosed in Rybicki in view of Russell.

The motivation for doing so would be to create a communication system which reduces the channel capacity used to synchronize a remote terminal once a link is established (Xu., Column 2, lines 4-7).

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki in view of Russell and further in view of Chao et al. (US Patent No. 5,790,539, hereinafter Chao) as applied to claim 1 above.

- With respect to claim 20, Rybicki discloses that the digital frequency separating filter together with a transformer, a line driver circuit, and a coded circuit are integrated on a single chip. It is inherent that any xDSL and POTS/ISDN combined termination

Art Unit: 2616

device as disclosed in Rybicki (Figure 3) would have a transformer, a line driver circuit, and a compressor/decompressor.

Rybicki in view of Russell does not disclose that all of the circuits could be combined on a single chip.

Chao teaches a system that has a variety of circuits all on a single chip (Figure 5).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to add the pulse shaper taught in Chao to the line termination device disclosed in Rybicki in view of Russell.

The motivation for doing so would be to save space on a circuit board that could be used to create even more functionality for the system.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Art Unit: 2616

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 and 3-21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 7,164,708. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 3-21 of the instant application merely broaden the scope of claims 1-13 of patent no. 7,164,708 by eliminating the elements and their functions of the claims. It has been held that the omission of an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Karlson 136 USPQ 184 (CCPA).

This is an obvious-type double patenting rejection.

Response to Arguments

8. Applicant's arguments filed 11/30/2006 have been fully considered but they are not persuasive.

On page 10 of the applicant's remarks, the applicant argues that "none of the embodiments of Rybicki's ADSL transmitter teach a digital low pass filter to separate voice signals for later use." Rybicki discloses a POTS transceiver (Fig. 2, Ref. No. 16) connected to a band pass filter. It is inherent that in order to make a phone call, a POTS transceiver would have to have a low pass filter. Despite all that, Russell was cited in the initial office action and in the new rejection of amended claim 1. Russell clearly teaches both a low-pass and a high-pass filter (Fig. 1A).

Art Unit: 2616

Applicant argues that the 35 U.S.C. 103 rejections should be withdrawn due to dependency. Since the rejections of the claims from which they depend have been maintained, then the rejections of the claims that depend from them are also maintained.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. DeGrano whose telephone number is 571-270-1138. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan Wing can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



WING CHAN
SUPERVISORY PATENT EXAMINER